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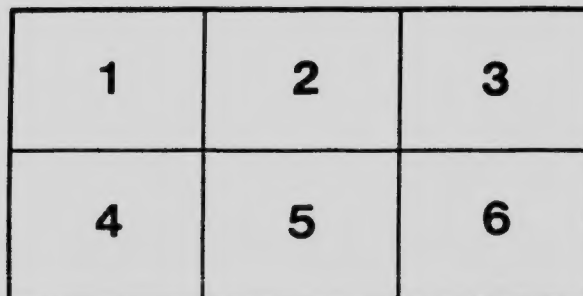
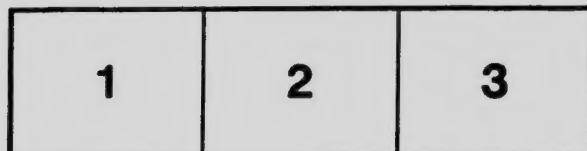
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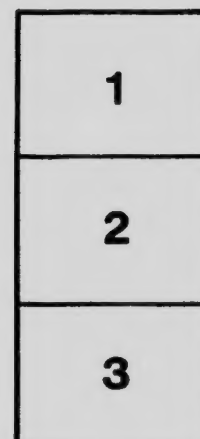
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REVIEW REPORT *of* W. A. CHARLTON

**on Ninety-one Square Miles, or 58,240 Acres,
of Timber Lands, known as Port McNeill Tract,
on Vancouver Island, B.C.**

SUPPLEMENTARY TO THE DETAILED REPORTS OF JAMES MOLONEY AND CLARK & LYFORD

**GIVING IN CONDENSED FORM SOME OF THE RESULTS
OF HIS INVESTIGATIONS ABOUT THIS
PORT MCNEILL TRACT**

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ON July 29th, 1907, at the request of the late Hon. Geo. A. Cox, I went to his office in Toronto for an interview with Mr. Cox and the parties who were offering to sell him eighty-eight square miles of Timber Lands on Vancouver Island. I met E. L. Kinman, whom I had not seen before; John Brophy, whom I knew; Peter Ryan, whom I also knew; G. A. Morrow, who was interested for Mr. Cox; and Mr. Cox.

E. L. Kinman stated he was the owner in the name of his Company of eighty-eight square miles of timber near Port McNeill on Vancouver Island, all located by himself, which he desired to sell, and gave his estimate of timber as two billion feet (2,000,000,000 feet) B. M. of good saw timber: White Hemlock, Spruce, Red and Yellow Cedar and small quantity of Douglas Fir and a large quantity of coarse timber and poles, posts and pulpwood. Good country for lumbering.

John Brophy, an Ontario timber cruiser of long experience, stated he had been on this tract and estimated eighteen hundred million feet (1,800,000,000 feet) B. M. of good saw timber: White Hemlock, Spruce, Red and Yellow Cedar, and some Fir, and a lot of coarse timber. Country well located for operating at small cost.

I advised Mr. Cox to take an option and send independent cruiser to examine and report. Mr. Cox requested me to undertake the management of this, which I did, and secured D. F. McDonald, one of the most reliable timber cruisers of Ontario, a man of large experience in this way, and sent him to make an examination to the best possible advantage as his time was limited. I gave him ten questions to answer:—

1. Quality, class and quantity of timber as nearly as possible by a hasty examination.
2. General lay of country and if favorable for railway construction and operation.
3. Prospect for shore rights at Port McNeill where logs would be watered, how much water lot made bare at low tide, which would be covered at high tide, and what the surface of this land is like, whether sandy, muddy, rocky or gravel.
4. Site for mill and yards and dock.
5. Condition of streams, whether log streams or otherwise, and variation in changes of seasons.
6. See if sections marked on Vendor's map are same as those on map you have, and get evidence of survey marks, posts and witness trees; get on high, bare elevation, if possible, from which make extended field notes and verify impressions by close examination of several areas after descending to level land again.

7. Ascertain if fire has been in or near this tract and if there is much or little danger of fire and why so, also if timber in this region has been much or little damaged by wind storms.
8. Compare your estimates with those of Vendor, of which you have a copy.
9. Take notes of other experienced lumbermen's opinions of this country, if opportunity offers, and other matters which may occur to you.
10. Get information about cost of logging and delivering logs in made up rafts at watering place, and cost of towing to Vancouver; cost of manufacturing lumber, and market conditions.

Mr. McDonald answered all these questions *in extenso*, too lengthy to quote here; but I give, in condensed form, some of the more important, as follows:—

1. Quality, good, large and sound; will produce at least 25,000 feet B. M. per acre of first-class, high-grade lumber and timber, and a large quantity of coarse timber not estimated, suitable for piles, ties and wharf timber; did not estimate under twenty inches in diameter. Travelled and inspected 28,500 acres and would safely say it will produce fifty per cent. first-class Alaska Pine; thirty per cent. Cedar first-class; twenty per cent. White Spruce first-class. The residue of this territory I scanned from good observation points and I am satisfied that it will produce about the same per acre as I have stated.
2. The general lay of the country is comparatively smooth along the streams and sloping gradually with a gentle rise towards the foothills; country favorable for railway construction and operation.
3. The shore rights mostly taken up for coal lands. The tide recedes about one thousand feet on low level; bottom, small boulders known as field stones, mud, sand, and gravel.
4. Running streams of spring water along shore where boilers can be supplied, two fine brooks flow into the bay at Port McNeill.
5. Nimpkish River is a fine drivable stream. The other streams at their source are too small for floating.
6. I could tell for a certainty by the Crown survey posts found that I was on the land shown by the map tracing in my possession.
7. No signs of fire and there is no danger of fire owing to the heavy fogs and deep moss. There have been no wind-falls, some scattered fallen trees are found on the hill crests but to no great extent.
8. In comparison of estimates made by Vendor, I refer you to my answer to question number one. The Vendor is selling, I was inspecting for the intending purchaser. The Alaska Pine or White Hemlock will average about three and a half feet on the stump; the Spruce about three feet; Cedar, sound and clean, about three and a half feet. The Alaska Pine will cut six sixteen-foot logs clear from knots; Spruce the same. Cedar, five sixteen-foot logs clear from knots. Each of these classes will cut one to two rough logs in addition. Measured diameters of a number of trees of each class, ranging from twenty-eight inches to ten feet. Timber very tall and straight;

measured two Alaska Pine trees lying down, one 158 feet long, butt 40 inches, top 11 inches; one 124 feet long, butt 41 inches, top 10 inches; one Cedar tree 158 feet, butt 10 feet, top 14 inches.

9. Met no experienced lumbermen as I was in the woods, and met none in my hurried trip after coming out.

10. Cost of watering logs seems to run from \$3.00 per thousand feet up, depends on nature of country and quality of timber. Could not learn cost of towing, and not much about manufacturing and market conditions.

McDonald's estimate on eighty-eight sections (56,320 acres) at 25,000 feet per acre is fourteen hundred and eight million feet (1,408,000,000 feet) of first-class, high-grade lumber and timber, not including a large quantity of other timber. As previously arranged, McDonald telegraphed me from Vancouver at once after getting out of the woods, and we immediately made the purchase of eighty-eight sections, and some time later acquired three more, making the ninety-one sections owned by the syndicate. Licenses transferred to Hon. Geo. A. Cox, as trustee.

In 1912, some members of the syndicate desired a close detailed estimate of the limits to be made and James Moloney, an experienced cruiser, was employed to make an examination by forties of the whole tract, and James Scott, another cruiser, was engaged to inspect random forties throughout the tract and in that way check up the work of Moloney. Moloney, with another estimator and two compass men, started at the work in the summer and continued at it until snow got too deep in November, when there remained two thousand and two hundred and eighty acres (2,280) to estimate and which he completed in 1913. His estimate on the ninety-one sections is: 1,573,175,000 feet B. M. Saw Timber, 76,624 Poles, 553,965 Posts, 672,988 cords Pulpwood. His report is given in detail, giving quantity, class and quality on each forty acres and a topographical map of each section in the whole tract, also giving the elevation of each forty-acre lot and a general map of the tract. Computing the Poles, Posts and Pulpwood into board measure at 100 feet for Poles, 10 feet for Posts and 500 feet per cord for Pulpwood, we have: Poles, 7,662,400 feet; Posts, 5,539,650 feet; and Pulpwood, 336,494,000 feet; total, 349,696,050 feet B. M.

James Scott, with one assistant, commenced the examination about August 1st, 1912, and continued until deep snow in November. He reported on forty-three sections singly, and on thirty-nine sections in groups of 3 1/2, 6 1/2, 8, 10 and 11. Nine sections no report. Also reported on 274 forties in detail, or 10,960 acres, estimating 249,503,500 feet, or an average of 22,766 2/3 feet per acre and stated that this area was representative of the whole tract of 58,200 acres. At this rate his estimate on ninety-one sections would be 1,325,024,850 feet of Saw Timber.

In his summing up of report on forty-three sections singly he makes out 472,270,000 feet Saw Timber
and on the thirty-nine sections in groups as stated above 460,474,000 feet Saw Timber

or a total on eighty-two sections of 932,744,000 feet Saw Timber, board measure.
At this rate on ninety-one sections his estimate would be 1,001,584,754 feet.

Moloney's estimate on these nine sections is 70,064,000 feet, which if added to 932,744,000 feet would be 1,002,808,000 feet. So that Scott's estimate by sections singly and in groups would be about 1,000,000,000 feet Saw Timber. His estimate of Poles, Posts and Pulpwood is: Poles, 2,817,150 lineal feet equal 80,490 Poles; 300,635 Posts, and 201,029 cords Pulp-

wood. Computing the Poles, Posts and Pulpwood into board measure at 100 feet for Poles, 10 feet for Posts, and 500 feet per cord for Pulpwood, we have: Poles, 8,049,000 feet; Posts, 3,006,350 feet, and Pulpwood, 100,514,500 feet; total, 111,569,850 feet B. M.

The large difference between estimates of Moloney and Scott caused a desire of the Syndicate to have a test applied in some way. I was requested to go and see the tract, even if very hurriedly, and report. I consented, knowing the difficulty on account of the short time at my disposal, but knowing also from my experience that if I could travel from thirty to fifty miles through the timber and on the route get on some high place which would afford a view of the tract, that I could give an approximate estimate of quantity and quality of timber and the general conditions for lumbering operations. E. L. Kinman, James Moloney with two sons and another man went with me. Moloney with his three helpers remained on the tract after I left, to cruise the 2,280 acres which they were obliged to leave in November, 1912. I travelled through about fifty miles of the tract, examining the timber carefully, and on July 23rd, 1913, ascended one of the twin peaks in section 14, about 4,000 feet high, where we melted snow to make tea. From this summit I had a fine view of a large portion of the tract, and made copious field notes, and after reaching home reported at some length, summing up that in my opinion there is more and better timber on this tract than any one has so far reported; that it is a dense, natural forest with trees of all sizes and ages; live, thrifty timber replacing mature, dead and dying timber, and no danger from fire for natural reasons given in explanation. While making this trip through the tract, I made an estimate of each forty-acre lot we came to upon which Moloney and Scott had both estimated. We came to twenty of these parcels and in my report I gave the estimates in detail, but will only mention the totals here as follows:—

Scott, 13,999,000 feet; Moloney, 26,036,000 feet; my estimates, 28,650,000 feet. I am ten per cent. over Moloney and one hundred and five per cent. over Scott.

It happened that one of these forties was included in the twenty-five forties measured later by Clark & Lyford, and their measurement is considerably over my estimate.

The Syndicate, I think, were perfectly satisfied with my report, but I was anxious to have it proven. Mr. Kinman had always stated that there is over 2,000,000,000 feet of Saw Timber on the tract, and I had reported more.

We had already engaged Clark & Lyford, forest engineers, of Vancouver, to measure the timber on twenty-five forties scattered through the tract as shown on map upon which both Moloney and Scott had given estimates. Dr. Clark had been lecturer on forestry in Cornell University and Mr. Lyford a graduate of Cornell and Yale and a forester of the highest standing. They measured the timber on these twenty-five forties during the summer and autumn of 1913, and reported November 24th, 1913. This report of actual measurement and a report of their estimate on ten sections dated December 29th, 1913, and the report of James Moloney for 1912 and 1913 on each forty acres of the ninety-one sections and his topographical map of each section are all embraced in a large volume containing many photographs of timber on the tract and a fine cut of the newly invented instrument used in measuring the timber on the twenty-five forties.

I submit now for comparison three statements copied from the reports of Clark & Lyford, James Moloney and James Scott, on the twenty-five forties measured by Clark & Lyford and estimated by Moloney and Scott in detail.

STATEMENT PREPARED BY W. A. CHARLTON, ON TWENTY-FIVE FORTY-ACRE LOTS, PORT McNEILL TRACT, VANCOUVER ISLAND.

FIGURES ARE FOR 50 MANY THOUSAND FEET BOARD MEASURE OR CORDS OF PULPWOOD

COPIED FROM BLUE PRINT REPORT OF CLARK & LYFORD ON THEIR MEASUREMENT OF THE TIMBER ON THESE TWENTY-FIVE FORTY-ACRE LOTS, 1913.

Locality			White Hemlock				Silver Fir				Spruce				Red Cedar				Yellow Cedar				Douglas Fir				Total Measurement		Pulpwood
Town	Sec	Forty	Normal		Defective		Normal		Defective		Normal		Defective		Normal		Defective		Normal		Defective		Normal		Defective		M. Feet	M. Feet	
			Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	
1	4	SWSW	200	239	408	234	233	233	200	102	8	7	5	3	240	204	861	513					70	66	27	16	2338	19	665
1	4	NENE	348	381	414	207	56	51	45	24	68	61	29	15	137	116	331	194					54	50	10	6	1492	045	526
1	5	SESW	27	376	493	237	216	200	132	69			1	1	404	331	894	534							8	4	2777	1972	833
2	3	SWSW	39	219	998	644	270	249	369	234	23	21	13	7	64	32	204	122									2180	1568	873
2	10	SESE	408	373	819	487	449	413	440	236	4	2			8	7	87	51									2215	1369	965
13	10	SESE	55	51	55	25	7	7	1	1									109	100	40	24					265	208	90
13	10	SWSW	310	284	473	235	212	195	222	108					5	5	23	14	306	262	426	218					1979	1321	590
13	20	SWSE	381	533	692	332	209	192	155	83					398	328	371	222	175	142	70	48					2591	1880	951
13	21	NWNW	716	659	1104	589	384	352	212	111					303	244	203	122									2922	2077	1255
13	24	NENE	337	490	214	111	145	134	4	1	2	2			1291	994	567	228	205	162	17	10					2982	2132	543
13	26	SWSW	735	667	1553	872	674	612	734	400	92	83	81	42	172	141	84	50	28	23	8	4					4161	2894	1460
13	27	NENE	965	882	733	283	457	418	118	44	12	10	8	4	307	253	211	115	53	43	12	9					2876	2061	1151
13	27	NWSW	722	661	727	377	452	414	120	61	4	3	18	7	35	28	12	7									2090	1558	1106
13	29	SESE	502	459	1449	780	484	444	561	298			5	3			2	1									3003	1985	1456
14	3	NWSW	491	450	629	271	207	192	84	41					228	187	194	96	197	165	236	143					2666	1543	969
14	3	SWSW	373	341	432	206	108	100	20	9					38	49	46	26	263	228	360	185					1662	1144	608
14	21	SESW	386	356	393	206	103	95	29	14	8	6			1090	896	569	336	58	51	18	11					2656	1971	558
14	22	SESW	275	252	679	396	325	299	312	175					49	38	40	25	219	229	261	164					1591	1122	819
14	24	NESE	192	177	230	112	58	54	31	15					138	130	147	87	15	13	11	6					1080	814	312
14	25	SESE	679	618	1042	566	258	237	287	152					318	250	59	36									2597	1809	801
14	28	SWSW	1387	1258	88	47	479	438	4	2	10	14															2351	2051	1124
14	29	SWNW	421	384	44	23	72	66	3	2					1048	846	467	278									2035	1599	394
14	29	NESW	926	840	64	33	319	293							449	363	225	134									1983	1663	784
14	30	SWNW	892	811	112	58	295	270	10	5	2	2			428	346	123	73	74	62	10	6					1944	1633	745
14	33	SWSW	610	557	356	152	174	161	90	47					393	298	472	168									2095	1383	761
Totals, Feet			13639	12458	14145	7530	6666	6121	4183	2254	239	211	160	82	7387	6112	6192	3432	1702	1480	1469	828	124	116	43	26	56,151,000	40,623,000	20339
Gross and Net			14145	7530			4183	2254			160	82			6192	3432			1469	828			43	26			Feet B.M.	Feet B.M.	Cords
Totals Gross			27,784,000				10,849,000				399,000				13,779,000 feet				3,171,000 feet				169,000 feet				= 56,151,000		
Totals Net			19,961,000 ft. B.M.				8,375,000 ft. B.M.				293,000 ft. B.M.				9,344,000 ft. B.M.				2,308,000 ft. B.M.				142,000 ft. =				= 40,623,000		
			49.1%				20.0%				0.7%				23.5%				5.7%				0.4%				= 100%		

Clark & Lyford's Measurement Gross (or full size) 56,151,000 feet Board Measure on 1,000 acres. Average 56,151 feet per acre.

Less for defective timber - - - - 13,528,000 feet equal to 27.634% of the gross, to make net measurement of Saw Timber, B.C. log scale.

Total Net Measurement - - - - 40,623,000 feet Board Measure Saw Timber, B.C. Scale, on 1,000 acres average 40,623 feet per acre.

Also 20,339 cords Pulpwood, which computed into Board Measure at 500 feet per cord would be 10,169,500 feet, or 10,169½ feet per acre.

This would make the gross measurement to be 66,320,500 feet, or 66,320½ feet per acre.

STATEMENT PREPARED BY W. A. CHARLTON ON TWENTY-FIVE FORTIES MEASURED BY CLARK & LYFORD, 1913.

COPIED FROM REPORT OF JAMES MOLONEY ON THE PORT McNEILL TRACT OF NINETY-ONE SQUARE MILES, HIS ESTIMATE ON THESE TWENTY-FIVE FORTIES IN DETAIL.

Location			White Hemlock		White Spruce		Spruce		Red Cedar		Yellow Cedar		Douglas Fir		Total	Wind-fall	Swp. Land	No.	No.	Cords Pulpwood
Twp	Sec	Forty	Net Feet B. Measure	No. of Logs to M. ft.	Net Feet B. Measure	Logs to M. ft.	Net Feet B. Measure	Logs to M. ft.	Net Feet B. Measure	Logs to M. ft.	Net Feet B. Measure	Logs to M. ft.	Net Feet B. Measure	Logs to M. ft.	Net Feet B. Measure	Acres	Acres	Poles	Posts	
1	4	SWSW	800,000	4	300,000	5			400,000	2			15,000		1,615,000	8		15	150	700
			200,000	9	100,000	14			200,000	4										
1	4	NENE	200,000	6					200,000	2			10,000		1,000,000	4		30	600	400
			100,000	10	100,000		50,000	2	400,000	6										
1	5	SESW	110,000	5	80,000	7			700,000	2					1,465,000	1		160	600	450
			250,000	2					575,000	4										
2	3	SWSW	400,000	6	800,000	5	110,000	3							1,560,000					800
			200,000	4																
2	10	SESE	530,000	7	850,000	5			60,000	2					1,640,000					1600
13	10	SESE									40,000	10	4,000 (Pine)		84,000			55	1800	40
			300,000	3	200,000	3					40,000	20								
13	10	SWSE	200,000	8	150,000	12					250,000	2			1,350,000			190	1800	600
			300,000	4	100,000	6			900,000	1	100,000	1								
13	20	SWSE	100,000	10	100,000	14			400,000	3	40,000	6			2,040,000			80	700	600
			900,000	3	300,000	5			300,000	1										
13	21	NWNW	400,000	10	200,000	14			150,000	5					2,250,000			20	150	850
			140,000	4	80,000	5			600,000	1	100,000	2								
13	24	NENE	100,000	10					300,000	4	60,000	10			1,580,000			110	600	340
			800,000	3	600,000	4			100,000	2										
13	26	SWSW	300,000	10	200,000	12	100,000	2	100,000	5	20,000	8			2,220,000			25	200	850
			600,000	5	400,000	6			100,000	1	40,000	4								
13	27	NENE	250,000	10	150,000	14			100,000	4	40,000	10			1,680,000			20	200	750
			800,000	4	500,000	5														
13	27	SWSW	300,000	9	200,000	14									1,600,000					800
			700,000	3	400,000	5														
13	29	SESE	300,000	10	200,000	14									1,600,000	1				900
			25,000	10							175,000	9			800,000	30				40
14	3	NW-W	100,000	7							350,000	8			450,000	27		500	1000	100
14	3	SW-W	200,000	5	100,000	5			600,000	1										
14	21	SE-W	100,000	10	100,000	14			300,000	5	12,000	8			1,412,000		7	50	600	500
			600,000	4	270,000	4														
14	22	SE-W	150,000	8	200,000	12									1,280,000	14				500
											100,000									
14	23	NESE	100,000	6							650,000	14			850,000	1		100	2000	150
			700,000	4	300,000	5			100,000	4										
14	25	SESE	300,000	8	200,000	10									1,600,000					1900
			200,000	4	50,000	6			800,000	1										
14	25	SWSW	100,000	10	25,000	14	10,000	4	800,000	3					1,985,000			65	1000	450
			200,000	3	100,000	5			200,000	2										
14	29	SWSW	150,000	9	100,000	14	20,000	3	200,000	5					970,000	20		25	400	400
			400,000	3	100,000	4			300,000											
14	29	NE-W	200,000	10	100,000	14			200,000						1,300,000	15		20	300	500
			400,000	5	200,000	6			300,000	3										
14	30	SWNW	200,000	10	100,000	14			100,000	5	20,000	6			1,320,000			20	400	650
			150,000	2					100,000	1										
14	35	SWSW	150,000	5	90,000	6			100,000	4					590,000	5		20	30	250
Total-			13,505,000		7,845,000		290,000		9,085,000		2,287,000		(25,000 4,000 (Pine))		33,641,000	125	7	1815	11,990	14,580
			40.2%		23.3%		0.8%		28.8%		6.8%		0.1%		100%					

James Moloney's estimate 33,641,000 feet, board measure, on 1,000 acres average 33,641 feet per acre Saw Timber.

Also 1,215 Poles
11,990 Posts
14,520 cords Pulpwood
[Computed into board measure at 100 feet for Poles, 10 feet for Posts and 500 feet per cord for Pulpwood, would be: Poles, 181,500 feet; Posts, 119,900 feet; Pulpwood, 7,260,000 feet Total, 7,501,400 feet, or 7,501 4/10 feet per acre.

STATEMENT BY W. A. CHARLTON ON THE TWENTY-FIVE FORTIES MEASURED BY CLARK & LYFORD, 1913.

COPIED FROM REPORT OF JAMES SCOTT ON THE FORT McNEILL TRACT, SHOWING HIS ESTIMATE ON THESE TWENTY-FIVE FORTIES IN DETAIL.

Location			Hemlock		Balsam		Spruce	Cedar			Yellow Cedar			Fir	Total	Errors	Wind fall and waste	Acres	No. of Poles	No. of Posts	Cords of Pulp- wood
No. of Town	No. of Sec.	Portion of Section	Over 16-inch	Under 16-inch	Over 16-inch	Under 16-inch	All sizes	Over 16-inch	Under 16-inch	Rough Dead and Down	Merchant- able	Rough	Dead and Down	Feet B.M.	Correct Footings	In Scott's Footings	Land acres	Tim- bered Land			
			Feet B.M.	Feet B.M.	Feet B.M.	Feet B.M.	Feet B.M.	Feet B.M.	Feet B.M.	Feet B.M.	Feet B.M.	Feet B.M.	Feet		In Feet B.M.	Feet B.M.					
1	4	SWSW	40,000	40,000	40,000	40,000	30,000	33,000						40,000	263,000		20	20	20		
1	4	NENE	135,000	35,000	100,000	35,000									305,000	270,000	25	15			
1	5	SESW	170,000	150,000	60,000	60,000		80,000		40,000					560,000			40	300		120
2	3	SWSW	300,000	50,000	240,000	50,000		100,000	45,000	30,000					825,000			40			120
2	10	SESE	400,000	100,000	295,000	225,000									1,080,000	1,017,000		40			50
13	10	SESE	55,000															40			
13	10	SWSE	50,000	30,000	55,000	55,000					140,000		70,000		245,000			40	800	500	
13	20	SWSE	310,000	90,000	90,000	50,000		50,000		150,000		35,000	37,000		292,000			40			
13	21	NWNW	215,000	75,000	110,000	50,000									940,000	890,000		40			120
13	24	NENE	95,000	35,000	60,000										450,000	640,000		40			80
13	26	SWSW	140,000	100,000				290,000		270,000					750,000	910,000		40			
13	27	NENE	380,000	90,000							100,000	50,000	140,000		550,000			40	400		
13	27	SWSW	450,000	170,000	120,000	80,000		60,000		45,000					515,000			40			
13	29	SESE	380,000	114,000	160,000	65,000									820,000			40			80
14	3	NWSW	350,000	50,000	300,000	100,000	20,000	300,000		40,000					712,000	619,000		40			120
14	3	SWSW	375,000	120,000	50,000	30,000		250,000		50,000	250,000	85,000			1,160,000	1,110,000		40	160		150
14	21	SESW	100,000	50,000				225,000		72,000					1,210,000	890,000		40	333		150
14	22	SESW	175,000	65,000	100,000	70,000									447,000			40		1000	75
14	24	NESE													410,000	430,000	20	20			100
14	25	SESE	210,000	110,000	140,000	75,000		25,000							200,000			40			
14	28	SWSW	255,000	70,000	100,000	35,000		105,000		37,000					558,000	550,000		40	100		75
14	29	SWSW	500,000	200,000	200,000	40,000		40,000							585,000			40			70
14	29	NESW	150,000	40,000	40,000										980,000			40			100
14	30	SWNW	110,000	35,000	100,000	50,000		50,000		20,000					250,000	390,000	25	15			
14	35	SWSW	450,000	50,000	405,000	145,000		38,000		44,000					345,000	345,000	15	25			70
															1,118,000	1,178,000		40			100
Total Footings.....			5,861,000	1,800,000	2,745,000	1,306,000	50,000	1644,000	45,000	798,000	600,000	250,000	327,000	40,000	15,515,000		105	895	2315	1500	1580
			1,800,000		1,306,000					798,000							acres	acres	No.	No.	Cords
Total			7,750,000 feet		4,051,000 feet		50,000 ft.	2,487,000 feet			1,157,000 feet			40,000	15,515,000		105	895	2315	1500	1580
			49.8%		26.1%		0.3%	16%			7½%			0.3%	= 100%						

James Scott's estimate 15,515,000 feet, board measure, on 1,000 acres. Average 15,515 feet per acre Saw Timber.

Also—2,315 Poles
1,500 Posts
1,580 cords Pulpwood } Computed into board measure at 100 feet for Poles, 10 feet for Posts and 500 per cord for Pulpwood, would be: Poles, 231,500 feet;
Posts, 15,000 feet; Pulpwood 790,000 feet. Total, 1,036,500 feet, or 1,036½ feet per acre.

The three preceding reports show the estimates in detail of James Moloney and of James Scott on twenty-five, forty-acre parcels and the quantity by actual measurement in Clark & Lyford's report.

Clark & Lyford's measurement of the Saw Timber full size is 56,151,000 feet board measure on 25 forties or 1,000 acres, from which they deduct, for defective timber..... 15,528,000 feet, equal to a reduction of 27.654 per cent.

Leaving..... 40,623,000 feet net measurement of Saw Timber B.C. scale.

Comparison—James Moloney, estimate of Saw Timber, 33,641,000 feet; Clark & Lyford measurement, 40,623,000 feet, equal $20\frac{3}{4}$ per cent. more.

James Scott, estimate of Saw Timber, 15,515,000 feet; Clark & Lyford measurement, 40,623,000 feet, equal $161\frac{8}{10}$ per cent. more.

The test measurement of Clark & Lyford, 40,623,000 feet is $20\frac{3}{4}$ per cent. over Moloney's estimate of 33,641,000 feet, showing Moloney to be 17.188 per cent. too low.
and $161\frac{8}{10}$ per cent. over Scott's estimate of 15,515,000 feet, showing Scott to be $61\frac{8}{10}$ per cent. too low.

In addition to the Saw Timber—

Clark & Lyford report 20,339 cords Pulpwood, at 500 feet per cord, B. C. rule, would make..... 10,169,500 feet B. M.
James Moloney reports 1,215 Poles, 11,990 Posts and 14,520 cords Pulpwood, which, at 100 feet B. M. for Poles, 10 feet B. M. for Posts, and 500 feet B. M. per cord Pulpwood, makes 7,501,400 feet B. M.
James Scott reports 2,315 Poles, 1,500 Posts, 1,580 cords Pulpwood, reduced to board measure... 1,036,500 feet B. M.
Clark & Lyford on this additional timber, over the Saw Timber, are 35.567 per cent. over Moloney.
and 881 per cent. over Scott.

Scott states in his report, however, that he has not included a large quantity of Pulpwood material he did not estimate and which would add materially to the total quantity of Pulpwood.

Note.—The Quebec rule is 600 feet B. M. for a cord of Pulpwood; but the British Columbia rule as reported in a letter of Clark & Lyford is 500 feet per cord B. M.

The test measurement of Clark & Lyford of the timber on twenty-five forties estimated in detail by both Moloney and Scott shows $20\frac{3}{4}$ per cent. more than Moloney on Saw Timber and 35.567 per cent. on other timber, and shows $161\frac{8}{10}$ per cent. over Scott on Saw Timber and 881 per cent. on other timber.

Moloney and Scott classed the other timber as Poles, Posts and Pulpwood.

Clark & Lyford classed it as all Pulpwood, but for comparison I have computed it all into B. M.

Clark & Lyford's summary (on page 182 of the large volume referred to) of their detailed report of the measurement of the twenty-five forties does not give the gross measurement of the timber and the quantity deducted for defects. My copy of their Blue Print Report gives this information.

Applying Clark & Lyford's test of the twenty-five forties to Moloney's and Scott's estimates of the whole tract we have the following results:—

Estimate of James Moloney on the whole tract, Saw Timber, 1,573,175,000 feet, add 20¾ per cent.,	
326,433,812 feet; total	1,899,608,812 feet
Estimate of James Moloney on the whole tract, other timber, 349,696,050 feet, add 35.567 per cent.,	
134,376,394 feet; total	484,072,444 feet

Total feet, board measurement, James Moloney report with test measurement applied	2,383,681,256 feet
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Estimate of James Scott on eighty-two sections out of the whole tract of ninety-one sections, saw timber, 932,744,000 feet, add 161 8/10 per cent., 1,509,179,792 feet; total	2,441,923,792 feet
without the nine sections not reported upon which Moloney reports 70,064,000 feet.	

Estimate of James Scott on other timber, Poles, Posts and Pulpwood, 111,569,850 feet, add 881 per cent., 982,930,378 feet; total	1,094,500,228 feet
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Total feet, board measurement, James Scott report with test measurement applied	3,536,424,020 feet
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Estimate of E. L. Kinman on eighty-eight sections, upwards of 2,000,000,000 feet good Saw Timber at that rate ninety-one sections would be	2,068,181,669 feet
and large quantity of coarse timber in addition.	

Estimate of John Brophy on eighty-eight sections, 1,800,000,000 feet good Saw Timber, at that rate ninety-one sections would be	1,861,363,635 feet
and a lot of coarse timber in addition.	

Estimate of D. F. McDonald on eighty-eight sections, 1,408,000,000 feet first-class, high-grade lumber and timber; large quantity of coarse timber not estimated and trees under twenty inches not estimated: at this rate the quantity of high-grade timber on ninety-one sections would be	1,456,000,000 feet
to which a large quantity of other timber would be added.	

Clark & Lyford make a statement on page 154 of the large volume hereinbefore referred to, that the trees were scaled into logs by the B. C. rule, a thirty-two-foot log being taken as the standard, that this rule makes no allowance for taper in logs under forty-two feet in length, and the use of a sixteen-foot instead of a thirty-two-foot standard log would increase the log scale from nine per cent. to fifty-four per cent. as shown in the table they set forth on this page referred to. I think I can safely say that the average increase if scaled into sixteen-foot logs, which is a common length, would be fifteen per cent. This would increase the tested estimate of 1,899,608,812 feet by Moloney by 284,941,321 feet or a total of Saw Timber

2,184,550,133 feet
Which with coarse timber
484,072,444 feet

Would total	2,668,622,577 feet on the Moloney and Clark & Lyford basis.
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There is no doubt in my mind of there being this quantity of sound timber on the tract after allowing, as Clark & Lyford have done, for all defects in the Saw Timber. The other timber being coarser but sound.

The percentages of the different classes are about as shown in the general report of James Moloney.

I consider the Alaska Pine or White Hemlock better lumber for most purposes than Douglas Fir. It is much like the Eastern White Pine.

H. R. McMillan, Chief Forester for British Columbia, agrees with me on this point and stated in a Parliamentary Committee at Ottawa last winter that this lumber is worth \$1.00 per thousand feet more than Fir in some of the markets. There is a large quantity of Yellow Cedar of fine quality, very valuable.

The timber named by Clark & Lyford as Silver Fir is referred to by Moloney as Silver Fir or White Spruce and by Scott as Balsam.

All parties named in this statement agree as to the fine quality of the timber on this tract and the general lay of the land as favorable for lumbering operations. Easy grades for railroads through large portions of the tract from Port McNeill, where the Syndicate own a fine mill site on deep water frontage within one and one-half miles from the northerly portion of these timber limits, where there is a very favorable site for a town. Over one-tenth of the timber could be conveniently watered in Nimpkish River if necessary or desirable. The Canadian Pacific and the Canadian Northern Railway Companies have their lines from the south-easterly portion of Vancouver Island to Rupert's Arm at the north-westerly portion of the island surveyed. These lines pass through the northerly portion of this tract near Port McNeill, so that the probabilities are that railway shipment will be available from this mill site as well as water shipment.

Alaska Pine or White Hemlock.....	46	per cent.
Silver Fir or White Spruce.....	20	"
Spruce	2	"
Red Cedar	24	"
Yellow Cedar, very fine	8	"
Small portion of Douglas Fir and White Pine ..		"
	100	"

W. A. CHARLTON.

TORONTO, CANADA, July 2nd, 1914

